

Centerpulse Orthopedics Ltd.

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Claims

1. An apparatus for the preparation of a femoral condyle for the insertion of monocondylar knee implants, comprising a spreading device (11) for the setting of a desired spacing between a femoral condyle and an oppositely disposed tibia plateau and comprising at least one functional attachment (13) couplable in a vertically adjustable manner with the spreading device (11), wherein the spreading device (11) includes a spreading section (27, 29), which can be introduced between the femoral condyle and the tibia plateau and which extends substantially perpendicular to the spreading direction, and a handling section (21, 31) for the spreading section (27) which includes an angle $\alpha > 90^\circ$ with the spreading section (27, 29), and wherein the functional attachment (13) supports a cutting and/or drilling jig (35, 45) and is adjustable at least vertically relative to the spreading device (11) when the desired spacing is set at the handling section (21, 31) by means of the spreading device (11).
2. An apparatus in accordance with claim 1, characterized in that the spreading device (11) includes a lower part (17) supportable at the tibia plateau, an upper part (19) adjustably guided at the lower part (17) and an actuation member (21) adjustably held at the lower part (17) which cooperates with the lower part (17) and the upper part (19) such that a setting movement of the actuation member (21) can

be translated into a spreading movement of the upper part (19) away from the lower part (17).

3. An apparatus in accordance with claim 2, characterized in that the upper part (19) is able to be acted on from below via the actuation member (21) and can be pressed away from the lower part (17) in the spreading direction.
4. An apparatus in accordance with claim 2, characterized in that the actuation member (21) is adjustable obliquely to the spreading direction and the upper part (19) is adjustable parallel to the spreading direction relative to the lower part (17).
5. An apparatus in accordance with claim 2, characterized in that the actuation member (21) is provided at its free end with a planar pressure surface (23) which extends parallel to a lower side of the upper part (19) which can be acted on by means of the pressure surface (23) and in particular perpendicular to the spreading direction.
6. An apparatus in accordance with claim 2, characterized in that a guide (25) for the upper part (19) extending parallel to the spreading direction and the region at which the actuation member (21) acts on the upper part (19) are offset with respect to one another perpendicular to the spreading direction.
7. An apparatus in accordance with claim 2, characterized in that the lower part (17) and the upper part (19) each have a plate-shaped spreading tongue (27, 29) with which the lower part (17) is sup-

ported at the tibia plateau and the upper part (19) can be pressed toward the femoral condyle.

8. An apparatus in accordance with claim 7, characterized in that the actuation member (21) is drivable into the intermediate space between the two spreading tongues (27, 29) and toward the lower side of the spreading tongue (29) of the upper part (19), with the lower part (17) including a base section (31) which extends obliquely to its spreading tongue (27) and in which the guide (25) for the upper part (19) is formed and the actuation member (21) is held.
9. An apparatus in accordance with claim 2, characterized in that the actuation member (21) is made as an adjustable screw.
10. An apparatus in accordance with claim 1, characterized in that the spreading device (11) is provided with a display device (33), in particular in the form of a scale, by means of which a desired height of the functional attachment (13) dependent on the thickness of the tibia implant to be inserted can be read off at the spreading device (11).
11. An apparatus in accordance with claim 1, characterized in that the functional attachment (13) is adjustable between discrete positions relative to the spreading device (11) which are spaced apart corresponding to the thicknesses of a set of tibia implants of different thickness.

12. An apparatus in accordance with claim 1, characterized in that the spreading device (11) is movable relative to the knee in the condition arranged between the tibia plateau and the femoral condyle, in particular substantially displaceable perpendicular to the spreading direction and/or rotatable about an axis extending substantially parallel to the spreading direction.
13. An apparatus in accordance with claim 1, characterized in that the spreading device (11) is couplable to a plurality of differently formed functional attachments (13).
14. An apparatus in accordance with claim 1, characterized in that at least one functional attachment (13) is made as a cutting jig (35) for fixing the position of a condylar cut (39) which is to be carried out when the knee is in extension and which in particular extends substantially parallel to the tibia plateau.
15. An apparatus in accordance with claim 1, characterized in that at least one functional attachment (13) is made as a cutting jig (37) for fixing the position of a condylar cut which is to be carried out when the knee is in flexion and which in particular extends substantially parallel to the tibia plateau.
16. An apparatus in accordance with claim 1, characterized in that at least one functional attachment (13) is made as a drilling jig (41) for fixing the position of at least one condylar bore which serves for the fixing of a femur implant, which is to be carried out when the knee

is in flexion and in particular extends substantially parallel to the tibia plateau.

17. An apparatus in accordance with claim 1, characterized in that at least one functional attachment (13) is made as a combined cutting and drilling jig (45) for the simultaneous fixing of the position of a condylar cut and of at least one condylar bore when the knee is in flexion.
18. An apparatus in accordance with claim 1, characterized in that at least one functional attachment (13), which is in particular formed as a combined cutting and drilling jig (45), can be fixed to the femoral condyle.
19. An apparatus in accordance with claim 1, characterized in that the functional attachment (13) includes a body section (47) extending obliquely to the spreading direction in the state coupled to the spreading device (11), couplable to the spreading device (11) and having a fixing device (49) and a head section (51) fixedly connected to the body section (47) which is formed as a cutting and/or as a drilling jig (35) or as a support for a separate cutting and/or drilling jig (45).
20. An apparatus in accordance with claim 19, characterized in that the head section (51) is made as a cutting jig (35) with a slot (53) for a cutting tool (55) defining a cutting plane and extending perpendicular to the spreading direction in the state coupled to the spreading device (11).

21. An apparatus in accordance with claim 19, characterized in that the head section (51) is made as a support for a separate cutting and/or drilling jig (45) which can be releasably connected to the head section (51) and which can be fixed to the femoral condyle when the knee is in flexion.
22. An apparatus in accordance with claim 21, characterized in that the cutting and/or drilling jig (45) is adjustable along the head section (51) in the state connected to the head section (51).
23. An apparatus in accordance with claim 1, characterized in that at least one functional attachment (13), which is in particular made as a combined cutting and drilling jig (45) can be coupled to an additional cutting jig which is made for fixing the position of a further condylar cut, in particular when the knee is in flexion, with the further condylar section extending in a curved manner between two planar cut surfaces (39) previously made at the femoral condyle.

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